

# Features

- built in active PFC
- Efficiency up to 88%
- Isolated Output 3kVAC / 1 min
- SCP, OLP Protection
- Operating Temperature Range -20°C to +60°C
- Universal Input 90-264VAC/120VDC-370VDC

# Regulated Converters

## RACG100

100 Watt  
Single  
Output



### Description

These industrial grade power supplies have been designed to give many years of trouble-free life. Despite their low cost, they use high grade electrolytic capacitors and are certified to heavy industry performance levels, working reliably over an extended temperature and world-wide input voltage range. The RACG series are more compact than the standard industry size, yet offer higher performance with full output protection (SCP, OLP), active power factor correction and improved input surge, hold-up time and efficiency ratings. The power supplies can be mounted horizontally or vertically and are fully certified to CE, UL and Class B EMC standards. Typical uses are industrial, commercial and high reliability applications. The RACG series come with a 3 year warranty.

### Selection Guide

| Part Number | nom. Input Voltage Range (VAC) | Input Current max. (A) | Output Voltage (VDC) | Adj. Output Voltage (VDC) | Output Current max. (A) | Efficiency (@230VAC) typ. (%) |
|-------------|--------------------------------|------------------------|----------------------|---------------------------|-------------------------|-------------------------------|
| RACG100-05S | 120-240                        | 1.5                    | 5                    | 3.3-5.5                   | 20                      | 84                            |
| RACG100-12S | 120-240                        | 1.5                    | 12                   | 10-15                     | 8.5                     | 87                            |
| RACG100-24S | 120-240                        | 1.5                    | 24                   | 21-27                     | 4.5                     | 88                            |
| RACG100-48S | 120-240                        | 1.5                    | 48                   | 43.2-52.8                 | 2.2                     | 88                            |



### Specifications (measured at T<sub>a</sub>= 25°C, nominal input voltage (230VAC), full load and after warm-up)

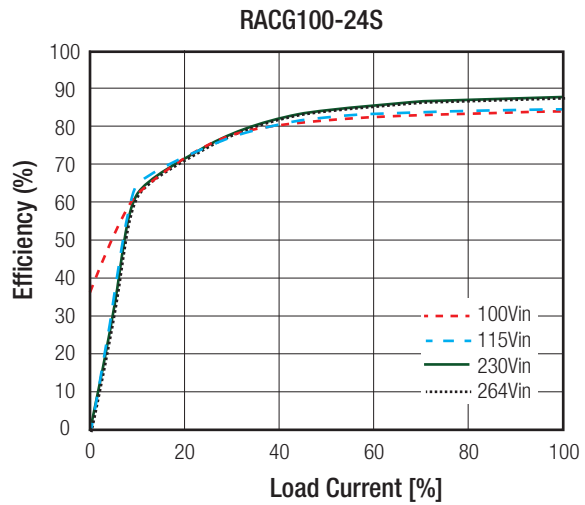
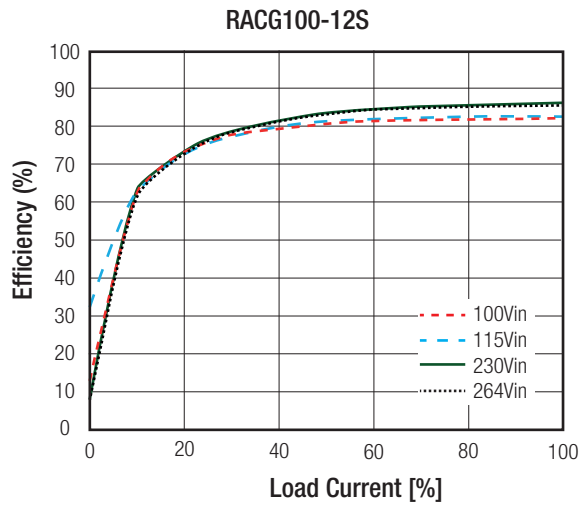
| BASIC CHARACTERISTICS   |  |                       |                 |              |                  |
|---|--|-----------------------|-----------------|--------------|------------------|
| Parameter   | Condition                                |                       | Min.            | Typ.         | Max.             |
| Input Voltage Range   |  |                       | 90VAC<br>120VDC |              | 264VAC<br>370VDC |
| Inrush Current  | cold start, 115VAC<br>cold start, 230VAC |                       |                 |              | 30A<br>50A       |
| No load Power Consumption   |  |                       |                 | 3W           |                  |
| Input Frequency Range   |  |                       | 47Hz            |              | 63Hz             |
| Set-up time   | 115VAC<br>230VAC                         |                       |                 |              | 4s<br>2s         |
| Hold-up time  | 230VAC                                   |                       |                 | 20ms         |                  |
| Output Voltage adjust   |  |                       |                 | ±10%         |                  |
| Minimum Load  |  |                       |                 | 0%           |                  |
| Power Factor  | 115VAC<br>230VAC                         |                       |                 | 0.98<br>0.93 |                  |
| Output Ripple and Noise <sup>(1)</sup>  | 0°C to +60°C                             | All                   |                 | 150mVp-p     |                  |
|   | -20°C to 0°C                             | 5Vout, 12Vout, 24Vout |                 | 150mVp-p     |                  |
|   |  | 48Vout                |                 | 200mVp-p     |                  |
| <b>Notes:</b><br>Note1: Measured @ 20MHz Bandwidth with a 0.1µF parallel capacitor. |  |                       |                 |              |                  |
| continued on next page  |  |                       |                 |              |                  |



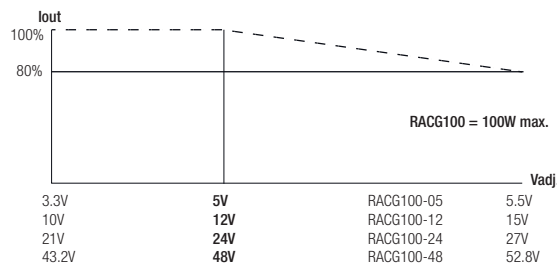
UL60950-1 Certified

**Specifications** (measured at  $T_a = 25^\circ\text{C}$ , nominal input voltage (115/230VAC), full load and after warm-up)

### Efficiency vs. Load



### Vadj. Derating



### REGULATIONS

| Parameter               | Condition                        | Value      |
|-------------------------|----------------------------------|------------|
| Output Voltage Accuracy | 5Vout, 12Vout                    | ±2% max.   |
|                         | 24Vout, 48Vout                   | ±1% max.   |
| Line Voltage Regulation | low line to high line, full load | ±0.5% max. |
| Load Voltage Regulation | 5Vout, 12Vout                    | ±2% max.   |
|                         | 24Vout, 48Vout                   | ±1% max.   |

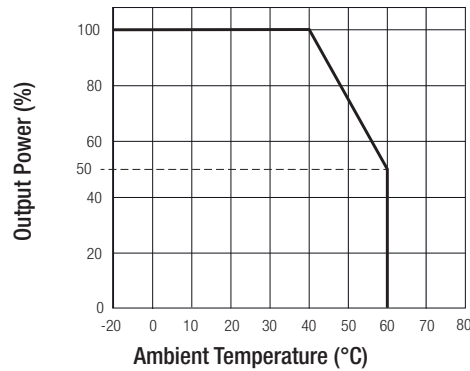
### PROTECTIONS

| Parameter                      | Type        | Value   |
|--------------------------------|-------------|---|
| Input Fuse                     | internally  | T5A, slow blow  |
| Short Circuit Protection (SCP) |             | continuous, Hiccup and auto recovery                          |
| Over Load Protection (OLP)     |             | 110% - 150% of rated output current, Hiccup and auto recovery |
| Isolation Voltage              | I/P to O/P  | 3kVAC/ 1 minute   |
|                                | I/P to Case | 1.5kVAC/ 1 minute   |
|                                | O/P to Case | 500VAC/ 1 minute  |
| Isolation Resistance           |             | 100MΩ min.  |
| Leakage Current                | I/P to O/P  | 0.25mA max.   |
|                                | I/P to Case | 3.5mA max.  |

**Specifications** (measured at  $T_a = 25^\circ\text{C}$ , nominal input voltage (115/230VAC), full load and after warm-up)

| ENVIRONMENTAL               |                                     |                             |
|-----------------------------|-------------------------------------|-----------------------------|
| Parameter                   | Condition                           | Value                       |
| Operating Temperature Range | with derating                       | -20°C to +60°C              |
| Temperature Coefficient     |                                     | 0.03%/°C                    |
| Operating Humidity          | non-condensing                      | 20% - 90%, RH max.          |
| Moisture Protection         |                                     | conformally coated PCB      |
| Operating Altitude          |                                     | 5000m                       |
| MTBF                        | MIL-HDBK-217F, ground benign, +25°C | 200 x 10 <sup>3</sup> hours |

### Derating Graph

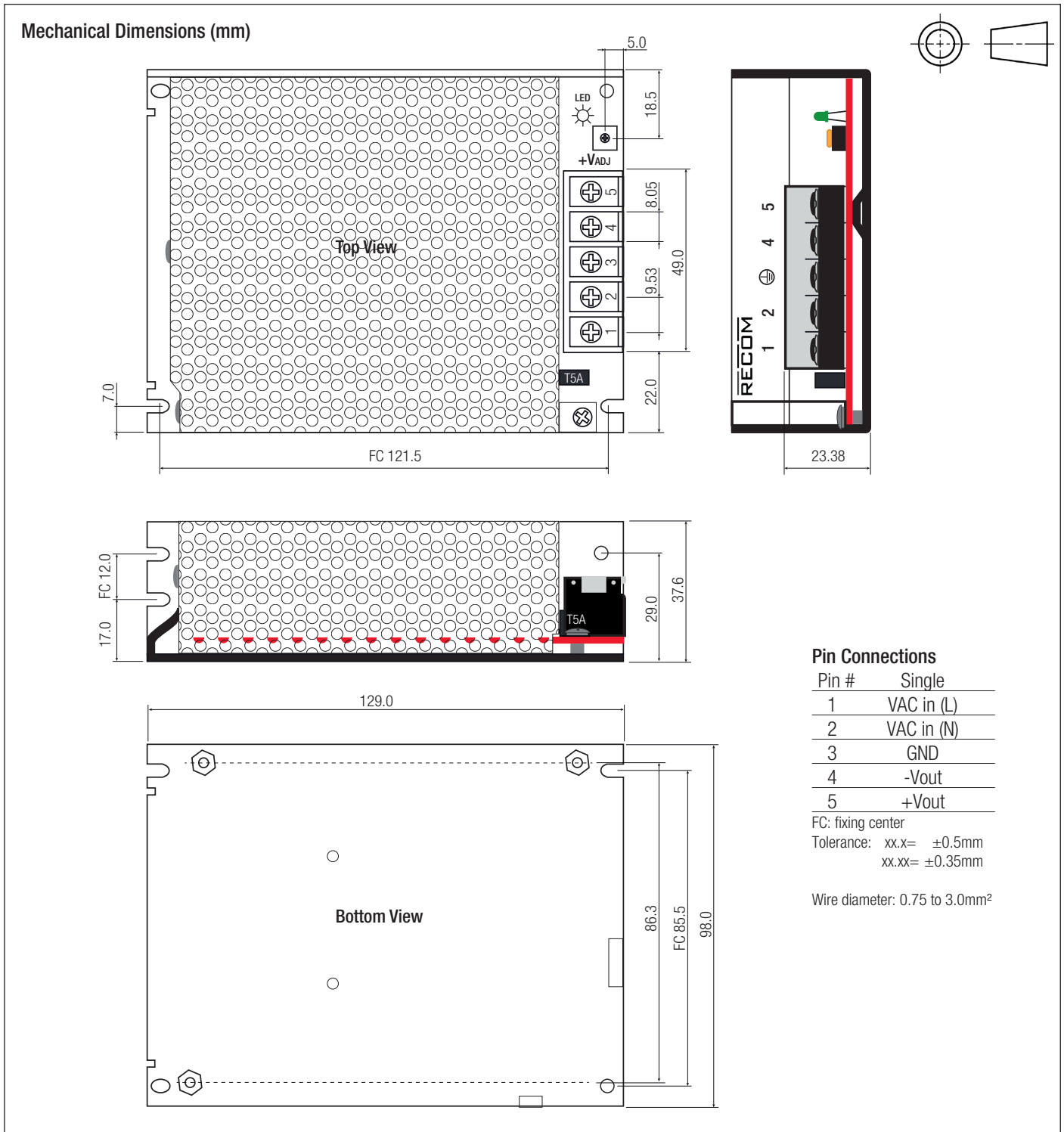


| SAFETY AND CERTIFICATIONS           |                      |                      |
|-------------------------------------|----------------------|----------------------|
| Certificate Type                    | Report / File Number | Standard             |
| UL General Safety                   | E196683              | UL60950-1            |
| CAN/CSA General Safety              | E196683              | C22.2 No. 60950-1    |
| Certificate Type (designed to meet) |                      | Standard             |
| IEC/EN General Safety               |                      | IEC/EN60950-1        |
| EMC Compliance                      | Conditions           | Standard / Criterion |
| EMI Standard                        | internal filter      | EN55022, Class B     |
|                                     |                      | FCC Part 15, Class B |
| Harmonic Current                    |                      | EN61000-3-2, Class A |

| DIMENSION and PHYSICAL CHARACTERISTICS |      |                       |
|--|------|-----------------------|
| Parameter                              | Type | Value                 |
| Case Material                          |      | Aluminium             |
| Package Dimension (LxWxH)              |      | 129.0 x 98.0 x 38.0mm |
| Package Weight                         |      | 432g typ.             |

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**Specifications** (measured at  $T_a = 25^\circ\text{C}$ , nominal input voltage (115/230VAC), full load and after warm-up)



### PACKAGING INFORMATION

| Parameter                   | Type           | Value              |
|-----------------------------|----------------|--------------------|
| Packaging Dimension (LxWxH) | Cardboard box  | 138 x 100 x 45mm   |
| Packaging Quantity          |                | 1pcs               |
| Storage Temperature Range   |                | -30°C to +85°C     |
| Storage Humidity            | non-condensing | 10% - 90%, RH max. |

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